National Institute of Environmental Health Sciences

Cancer in children residing near nuclear power plants: An open question

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Abstract:

BACKGROUND: Global warming and the established responsibility of the anthropogenic emissions of greenhouse gases represent a strong push towards the construction of new nuclear power plants (NPPs) to cope with the growing energy needs. The toxicity of nuclear waste associated with the extreme difficulty of their disposal and increase in cancer mortality and incidence following occupational radiation exposure are considered the only health problems. METHODS: A search of scientific articles and government documents published since January 1, 1980 to July 1, 2010 was performed to evaluate cancer rate and mortality in residents, particularly children, in the vicinity of NPPs. RESULTS: A recent well conducted state-of-the-art case-control study of childhood cancers in the areas around German NPPs (KiKK study) showed a statistically significant cancers (2.2-fold increase in leukemia and a 1.6-fold increase in solid tumor) among children under five years of age living in the inner 5 km circle around NPPs when compared to residence outside this area. These findings have been confirmed by two meta-analyses. Nevertheless, other UK, France, Spain and Finland studies did not find cancer incidence and/or death increase near NPPs. CONCLUSIONS: Increased cancer risk near NPPs remains in fact an open question. The stronger evidence from the KiKK study suggests there may well be such increases at least in children regardless of the country in which nuclear reactors are located. In fact, few months ago the U.S. Nuclear Regulatory Commission has asked the National Academy of Sciences (NAS) to perform a state-of-the-art study on cancer risk for populations surrounding NPPs.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2944154

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Other Exposure

Other Exposure: Radiation Exposure

Geographic Feature:

resource focuses on specific type of geography

Other Geographical Feature

Other Geographical Feature : Proximity to Nuclear Power Plants

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Cancer

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Mitigation

Population of Concern: A focus of content

Resource Type:

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified